GORIN, V.A.

New findings on mud volcano activity in southeastern Caucasus. Dokl.AN Azerb.SSR 11 no.10:709-712 '55. (MLRA 9:2)

1.Institut geologii imeni I.M.Gubkina AN Azerbaydzhanskoy SSR. Predstavlena deystvitel'nym chlenom AN Azerbaydzhanskoy SSR M.A.Kashkayem.
(Caucasus--Mud volcanoes)

MEKHTIYEV, Sh.F.; GORIN, V.A., redaktor; DOLGOV, V.I., redaktor; PEVZNER, M.I., tekhnicheskiy redaktor

[Problems in the origin of petroleum and the formation of petroleum-bearing strata in Azerbaijan] Voprosy proiskhozhdeniia nefti i formirovaniia neftianykh zalezhei Azerbaidzhana. Baku, Izd-vo Akademii nauk Azerbaidzhanskoi SSR, 1956. 317 p. (MIRA 10:3)
(Azerbaijan--Petroleum geology)

ALIKHANOV, Anver Nazarovich; GORIN, V.A., professor, redaktor; GONCHAROV, I.A., redaktor izdatel'stva

[Sub-Kirmaki series of the eastern part of Apsheron Province and its oil bearing possibilities] Podkirmakinskaia svita vostochnoi chasti Apsheronskoi oblasti i ee neftenosnost'. Baku, Azerbaidzhanskoe gos.izd-vo neft. i nauchno-tekhn. lit-ry, 1957. 215 p. (MLRA 10:9)

(Apsheron Province--Petroleum geology)

GORIN, V.A.

Oil- and gas-bearing prospects of Teritiary deposits in the southern Caspian Depression. Geol. nefti 1 no.12:1-4 D '57. (MIRA 11:1)
(Caspian depression--Petroleum geology)
(Caspian Depression--Gas, Natural--Geology)

GORIN, V.A.; VEZIROVA, A.D.

Mechanism of the rearrangement of material layers during fold formation. Uch.zap. AGU no.9:41-48 '57. (MIRA 11:11)
(Apsheron Peninsula--Folds (Geology)) (Kobystan--Folds (Geology))

GORIN, V.A.; VEZIROVA, A.D.

Mechanism of fissure formation in folds. Dokl. AN Azerb.SSR 13 no.4:395-399 '57. (MLRA 10:7)

1. Akademiya nauk Azerbaydzhanskoy SSR, institut geologii. Predstavleno akademikom Akademii nauk Azerbaydzanskoy SSR. Ah.A. Azizbekovym.

(Folds (Geology))

GORIN, V.A., VEZIROVA, A.D.

Achagyl reef limestones in southern Daghestan. Dokl. AN Azerb.SSR 13 no.5:525-528 '57. (MLRA 10:7)

1. Institut geologii. Predstavleno akademikom Akademii nauk Azerbaydzanskoy SSR M.V. Abramovichem.
(Kasumkent District--Limestone)

GORIN, V.A.

Formation of oil and gas pools in the area of the northwestern margin of the southern Caspian Depression. Azerb.neft.khoz.36 no.2:1-3 F '57. (MIRA 10:4)
(Caspian Depression--Petroleum geology)

GORIN, V.A.

Baku earthquake of November 28, 1958. Dokl.AN Azerb.SSR 15 no.8:703-706 '58. (MIRA 13:1)

1. Predstavleno akademikom AN AzerSSR M.V.Abramovichem.
(Baku--Earthquake, 1958)

AUTHOR: Gorin, V. A. SOV/20-122-4-40/57

TITLE: Genetic Zones of Oil and Gas Accumulation in the South Caspian Depression and the Origin of Oil and Gas (Geneticheskiye zony neftegazonosnosti Yuzhnoy Kaspiyskoy vpadiny i proiskhozhdeniye nefti i gaza)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 122, Nr 4, pp 683-684 (USSR)

ABSTRACT: As a result of investigations concerning the occurrence of oil and gas in the South Caspian depression, a great deal of observational data has been assembled and thoroughly studied. This work makes possible a conclusion regarding the formation of oil and gas deposits, and leads us nearer to a solution of the problem of their origin. It has been accepted since 1938 (Ref 2), that deep faults, originating from the tectonics and deformation of the west edge of the depression, have played the chief roll in controlling the occurrence of gas and oil. This has been substantiated by geophysical investigations, and, more importantly, by the position of the large, active mud volcanoes. The author has distinguished 2 basic directions of faults and associated volcanoes: northwest-southeast

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(kavkazskoye) and northeast-southwest (Ref 2). These are the chief dislocation planes of the lower Tertiary and Mesozoic masses in the tectonic scheme. Especially notable is the direct correspondence between the periods of intensive mud vulcanism and the fluctuations in the level of the Kaspiyskoye more (Caspian Sea) within the last 150 years (Refs 1 and 4). It may be firmly asserted that oil and gas accumulations of the depression have originated through vaporous migration from oil and gas producing foci near the base of the sedimentary complex. The position of the roots of the mud volcanoes allows these foci to be seen in the contact zone between the sedimentary mass and the crystalline basement. Migration was chiefly vertical, and lateral migration occurred later only in the reservoir beds, in which the oil and gas was distributed according to gravitational laws. The source beds are not known, since the source of the oil and gas lies at great depth. The author specifies 4 genetic zones of regional oil and gas containing layers: a. the northern Apsheronskiy anticline, b. the southern anticline, c. the Alyatskiy anticline, and d. the Prikurinskiy anticline in the vicinity of Kura. Anticlines a. and b. are (together with the related faults)

in the region of the richest oil deposits of the sea and mainland, which are currently being exploited on the Azerbaydzhanskaya structural step. Anticlines c. and d. are related to the southeast edge of this structural step. The Turkmenskaya tectonic step of the eastern edge of the depression plays an analogous roll. From these observations (chiefly in Azerbaydzhan) it is to be concluded that S. A. Kovalevskiy (Ref 5) and N. A. Kudryavtsev (Ref 6) are close to the solution of the question of oil and gas genesis, apart from the difference of opinions concerning the organic or inorganic origin of oil. There are 1 figure and 7 references, 7 of which are Soviet.

PRESENTED: May 19, 1958, by D. V. Nalivkin, Member, Academician

SUBMITTED: May 19, 1958

GORIN, V.A.

Oil volcanism and oil potential of the producing layer in the Apsheron Peninsula. Uch.zap.AGU. Geol.-geog.ser. no.1:3-9 '59. (MIRA 15:12)

(Apsheron Peninsula--Petroleum geology)

GORIN, V.A.

Oil-bearing regions of the western slope of the southern part of the Caspian Depression. Izv.AN Azerb.SSR.Ser.geol.-geog. nauk no.1:13-22 '59. (MIRA 12:5)
(Caspian Depression--Petroleum geology)

GORIN, V.A.; SULTANOV, A.D.

Mechanism of the formation and composition of breccia of petroleum volcanic necks in the producing formation of the Apsheron Peninsula. Izv. AN Azerb. SSR. Ser. geol.-geog. nauk no.4:13-25 '59.
(MIRA 13:1)
(Apsheron Peninsula--Necks (Geology))

14 (5), 3 (5)

AUTHORS: Gorin, V. A., Gadiyeva, T. M. SOV/20-126-2-33/64

TITLE: Petroleum Volcanic Necks and Asphaltic Pebble in Pliocene Deposits of the Apsheron Peninsula (Neftevulkanicheskiye nekki i asfal'tovaya gal'ka v otlozheniyakh pliotsena Apsheronskogo poluostrova)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 126, Nr 2, pp 344-347 (USSR)

ABSTRACT: In the tectonic scheme of the western edge of the Yuzhno-Kaspiyskaya (South Caspian) depression, the Apsheron Peninsula takes the place of the northern Apsheron wall of the mesozoic structural stage (Ref 1). Ranges of now active and fossil mud- (mud-petroleum)-volcano and natural gas outlets (Fig 1) stretch along the north-west and south-east edge of this wall. Discovered by the author, these necks and dykes at the bottom of the productive mass are directly connected to the northern edge of the said wall, where very rich petroleum deposits are (Figs 2, 3). Moreover, the deposits of asphaltic pebbles (Ref 4) in the sediments of the Apsheron stage (Fig 4) are also connected to the said wall. The fossil petroleum-volcanic necks and dykes with their related now active mud-volcanoes

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stretch, as a narrow strip along a break-gorge. Here, on the continuation of a strip of fossil mud-volcanoes, and in the vicinity (Ref 2), numerous necks and dykes are to be found at the bottom of the productive mass. The origin of these necks is connected to the long working effect of almost perpendicularly-rising streams of a very gaseous petroleum. These streams have polished the side-walls of the almost perpendicular canals. Isolated necks measure 2-3 meters across, but also sometimes form groups, and with an increasing diameter the unite to a single large neck. They are also formed of breccias, in which petroleum has replaced water. The said necks and dykes prove an earlier perpendicular migration of petroleum and natural gas into the productive mass of the Apsheron Peninsula, and the saturation of this mass with petroleum. They penetrated a considerable part of the now washed-out productive mass. Their roots are connected to petroleum and natural gas deposits of the lower structural stage. The component composition of the bitumen, out of the spiralis chalk, proved (on the authority of T. M. Digurova) to be analogous to that of the substage of the

Kirmakinskaya suite. Large lumps of such chalk are also erupted by the mud-volcanoes. All this is an important proof (Refs 2, 3) of the fact, that the petroleum and natural gas deposits in the productive mass, are formed by a perpendicular migration out of the sediments laying beneath. Thus a genetical connection between the petroleum-natural gas-(mud-)-volcanism, the deep-seated fractures and the perpendicular migration of hydrocarbon, and the formation of exceedingly rich petroleum and natural gas fields was proved. Also the southern zone of the northern Apsheron wall proves the above statement. Figure 4 shows samples of "petroleum" pebbles, taken by T. M. Gadiyeva. There are 4 figures and 4 Soviet references.

ASSOCIATION: Institut geologii Akademii nauk AzerbSSR (Geological Institute of the AS Azerbaydzhan SSR)

GORIN, V.A.

Modern and buried kir covers on the Apsheron Peninsula. Dokl. AN Azerb.SSR 15 no.12:1129-1134 '59. (MIRA 13:4)

1. Institut geologii AN AzerSSR. Predstavleno akademikom AN AzerSSR M.-A.Kashkayem.
(Apsheron Peninsula--Petroleum--Geology)

GORIN, V.A.

Conditions governing the formation of asphalt and asphalt pebble lenses in the Pliocene structure of the Apsheron Peninsula. Dokl. AN Azerb.SSR 16 no.8:755-758 '60. (MIRA 13:9)

1. Institut geologii AN AzerSSr. Predstavleno akad. AN AzerSSR M.V. Abramovichem.
(Apsheron Peninsula--Asphalt)

GORIN, V.A.

South Apsheron ridge and its oil and gas potentials. Uch. zap.AGU.Geol.-geog.ser. no.3:31-35 '60. (MIRA 14:6)
(Apsheron Peninsula--Petroleum geology)
(Apsheron Peninsula--Gas, Natural--Geology)

MEKHTIYEV, Sh.F.; GORIN, V.A.

Paths and aspects of vertical migration of oil in a productive bed. Uch.zap.AGU.Geol.-geog.ser. no.3:3-8 '60. (MIRA 14:6)
(Petroleum geology)

SULEYMANOV,D.M., otv.red.; KULOSHVILI,I.S., otv.red.; POBEDONOSTSEV,N.M., otv.red.; LANGE,O.K., prof.glav.red.; ABRAMOVICH,M.V.,red.;AZIZBEKOV, Sh.A.,red.; ALIYEV,A.G.,red.; ALIZADE,A.A.,red.; ALIZADE,K.A.,red.; GORIN,V.A.,red.; KASHKAY,M.A.,red.; MEKHTIYEV,Sh.F.,red.; SULTANOV, A.D.,red.; DOLGOV,V., red.izd-va;

[Geology of Azerbaijan; hydrogeology] Geologiia Azerbaidzhana; gidrogeologiia. Glav.red.O.K.Lange.Otv.red.D.M.Suleimanov, I.S.Kuloshvili i N.M.Pobedonostsev. Baku,Izd-vo Akad.nauk Azerb.SSR, 1961. 357 p. (MIRA 14:12)

1. Akademiya nauk Azerbaidzhanskoy SSR, Baku. Institut geologii.
(Azerbaijan—Water, Underground)

GORIN, V.A.; MEKHTIYEV, Sh.F.

Depth of the roots of petroleum necks and dikes in the Apsheron Peninsula. Uch.zap.AGU.Ser.geol.-geog.nauk no.5:3-8 '61. (MIRA 16:9)

GORIN, V.A.; SULTANOV, K.[illegible], Z.E.

Lokbatan-Atashkya-Bibiheybat tectonic block. Uch.zap.AGU.Ser.geol.-geog.nauk no.5:9-13 '61. (MIRA 16:9)

OVNATANOV, S T ; GORIN, V.A ; [illegible]

Geology of the Kirmaku Ridge. Izv.AN Azerb.SSR Ser.geol.-geog. nauk i nefti no.5:41-53 '61. (MIRA 15:5)
(Apsheron Peninsula--Petroleum geology)
(Apsheron Peninsula--Gas, Natural--Geology)

MEKHTIYEV, Sh.F.; GORIN, V.A.

Direct indications of the vertical migration of oil and its phases in the Pliocene and Quaternary of the Apsheron Peninsula. Uch.zap.AGU. Geol.-geog.ser. no.6:3-11 '61. (MIRA 16:1)
(Apsheron Peninsula--Petroleum geology)

GORIN, V.A.

Vertical and lateral migration of petroleum. Dok.AN Azerb.SSR 17 no.4:305-308 '61. (MIRA 14:6)

1. Institut geologii AN AzerSSR. Predstavleno akademikom AN AzerSSR Sh.F. Mekhtiyevym.
(Petroleum--Geology)

GORIN, V.A.; ZEYNALOVA, Z.G.

Migration of petroleum along fractures in the Kirmaki series of a productive layer. Dokl. An Azerb. SSR 17 no.5:387-393 '61. (MIRA 14:6)

1. Institut geologii AN Azerbaydzhanskoy SSR Predstavleno akademikom AN Azerbaydzhanskoy SSR M.A. Kashkayem.
(Apsheron Peninsula—Petroleum geology)

GORIN, V.A.

Characteristics of the distribution of oil and gas pools in the southern part of the Caspian Depression. Sov.geol. 5 no.6:33-42 Je '62. (MIRA 15:11)

1. Institut geologii AN Azerbaydzhanskoy SSR.
(Caspian Depression--Petroleum geology)
(Caspian Depression--Gas, Natural--Geology)

GORIN, V.A.; ALIYEV, F.S.

Mechanism of the formation of certain types of exogenic folds. Dokl. AN Azerb. SSR 18 no.5:25-28 '62. (MIRA 15:7)

1. Institut geologii AN AzSSR. Predstavleno akademikom AN AzSSR Sh.F. Mekhtiyevym.
(Apsheron Peninsula—Folds (Geology))

ZEYNALOVA, Z.G.; GOREN, V.A.

Some characteristics of the sedimentation of coarse detrital material in the lower part of the Balakhany series. Izv. AN Azerb. SSR Ser. geol.-geog. nauk i nefti no.5:73-76 '62. (MIRA 16:6)

(Apsheron Peninsula—Rocks, Sedimentary)

GORIN, V.A.; DZHABARLY, F.G.

Mechanism of the migration and distribution of oil and gas in the Middle Pliocene of the Apsheron Peninsula. Dokl. AN Azerb. SSR 19 no.10:39-43 '63. (MIRA 17:6)

1. Institut geologii imeni akademika I.M. Gubkina. Predstavleno akademikom AN Azerbaydzhanskoy SSR Sh. F. Mekhtiyevym.

AMANOV, Soltanmurad; GORIN, V.A., doktor geol.-miner. nauk, prof., nauchn. red.; KUZ'MENKO, A.I., red.; NASIBOVA, S.G., red.

[Akchagyl' sediments in the Balkhan Range region and their oil and gas potentials; western Turkmenistan] Akchagyl'skie otlozheniia Pribalkhanskogo raiona i ikh neftegazonosnost'; Zapadnyi Turkmenistan. Ashkhabad, Turkmenizdat, 1964. 174 p. (MIRA 18:1)

MEKHTIYEV, Sh. F., ALIYEV, A. A., GOR'YE, V.A., red.

[Geological and geochemical characteristics of Upper Pliocene sediments in the eastern part of the Kura Depression] Geologogeokhimicheskaia kharakteristika verkhnepliotsenovykh otlozhenii vostochnoi chasti Kurinskoi vpadiny. Baku, Azerneshr, 1966. 144 p. (MIRA 18:8)

GORIN, V.A., prof. (Baku)

Fossil necks. Priroda 54 no.8:94-95 Ag '65.
(MIRA 18:8)

GORIN, V.I.; MUSHAILOV, S.M.

Hydraulic perforation of wells in the Chechen-Ingush A.S.S.R.
Nefeprom.delo no.5:26-30 '64. (MIRA 17:9)

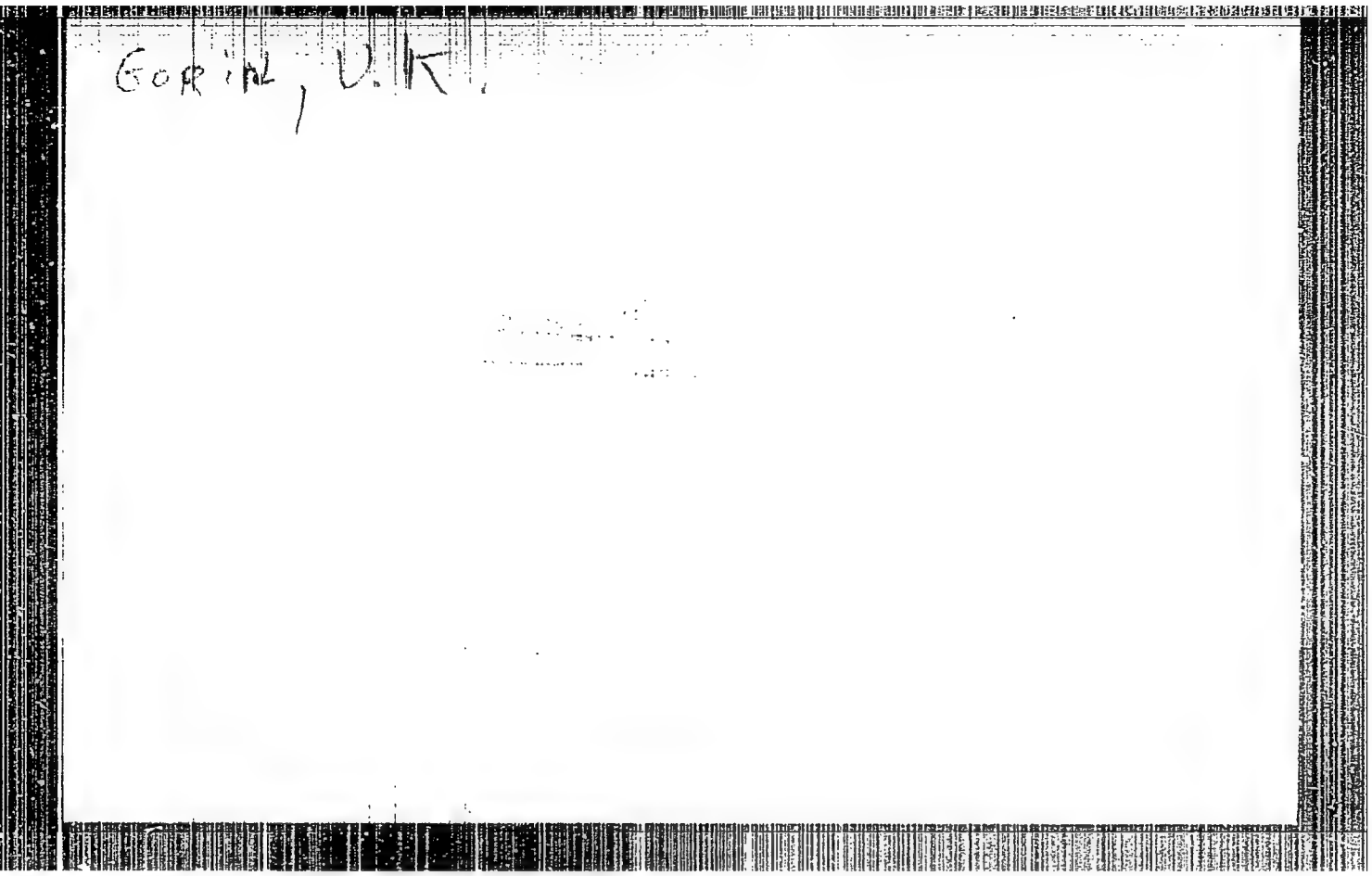
1. Ob"yedineniye "Groznefť".

[illegible]IN, V.I., inzh.; KOV[illegible]ENKO, A.[illegible], inzh.

Joint burning of natural gas and high-sulfur mazut. Elek. sta. 35 no.3:16-19 Mr '64. (MIRA 17:6)

MIKHIN, M.K.; GORIN, V.K.; KUZIN, M.D., inzhener, redaktor; SHAVEL'ZON, M.V., inzhener, redaktor; CHARIKHOV, L.A., inzhener, redaktor.

[Automatic control of Martin furnaces] Avtomaticheskoe regulirovanie martenovskikh pechei. Sverdlovsk, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1953. 503 p. (MLRA 7:6)
(Open-hearth process) (Automatic control)



1. [redacted]

137-1958-2-2426

Translation from: Referativnyy zhurnal, Metallurgiya. 1958, Nr 2, p 32 (USSR)

AUTHORS: Paliy, L.F., Gorin, V.K., D'yakonov, A.I.

TITLE: The Productivity of Open-hearth Furnaces as a Function of the Values of the Parameters of the Bath (Proizvoditel'nost' martenovskikh pechey v zavisimosti ot velichiny parametrov vann)

PERIODICAL: V sb.: Fiz.-khim. osnovy proiz-va stali. Moscow, AN SSSR, 1957, pp 42-60. Diskus., pp 160-187

ABSTRACT: A study of the performance of open-hearth furnaces of diverse tonnages revealed that the total time to complete a heat, Z, is expressed by the straight-line equation $Z = \Sigma + K H_{av}$; the first term, Σ (the summation of the amounts of time needed for preparatory servicing, charging, reduction, and tapping), is not a function of the tonnage (T) of the furnace, but is determined solely by the quality of the work-planning and the degree of mechanization; the second term (the sum of the amounts of time needed for melting and the "boil") is proportional to the mean depth of the bath; moreover, the coefficient K is a function of thermal and mechanical factors. An analysis of existing units of specific productivity of open-hearth furnaces, i.e., in terms of the yield,

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137-1958-2-2426

The Productivity of Open-hearth Furnaces (cont.)

revealed their complicated dependence on the design and dimensions of the baths, which makes these units unsuitable for comparing the performances of open-hearth furnaces of equal tonnage. It was found that the hourly productivity of open-hearth furnaces is proportional to certain functions of their dimensions:

$$P \approx M \sqrt[3]{T^2} \qquad \text{and} \qquad P \approx L \sqrt[3]{H_{av}} \cdot S_o$$

wherein S_o is the area of the bath surface, P is the productivity of the open-hearth furnace, and the coefficients M and L (which are proportional to one another) are the absolute units of specific productivity and are independent of the dimensions of the furnaces. The yield of steel, taken in units of $T^{2/3}$, which is called the nominal working capacity of an open-hearth furnace, is determined solely by the quality of work planning and the degree of mechanization. These findings have been verified by data obtained from questionnaires covering 89 foreign and domestic furnaces of from 4 to 320 tons.

Bibliography: 8 references. G.S.

Card 2/2 1. Furnaces--Production--Theory 2. Melts--Mathematical analysis

GORIN, V. K.

137-1958-3-4779

Translation from: Referativnyy zhurnal, Metallurgiya, 1958. Nr 3, p 46 (USSR)

AUTHORS: D'yakonov, A. I., Gorin, V. K.

TITLE: A Rotary Spout for the Discharging of Metal From Large Open-hearth Furnaces (Povorotnyy zhelob dlya vypuska metalla iz bol'shegruznykh martenovskikh pechey)

PERIODICAL: Sb. nauchn. tr. Magnitogorskiy gorno-metallurg. in-t. 1957, Nr 11, pp 70-76

ABSTRACT: The Magnitogorsk metallurgic combine developed a rotary spout for large open-hearth furnaces, which ensures good control over the filling of two ladles with metal and slag when the melt is discharged. The spout is mounted on two supporting sections set on rollers and may be rotated by means of a power drive from an electric winch. The lining of the spout interlinks with a trough (approximately 400 mm long), attached to the mounting plate of the discharge opening of the furnace.

V P.

Card 1/1

137-58-4-6687

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 54 (USSR)

AUTHORS: Tuzankin, N.M., Gorin, V.K., D'yakonov, A.I.

TITLE: Car-bottom Slag Pockets for Rapid Slag Removal Regardless of its State of Aggregation (Vydvizhnyye shlakoviki dlya bystrogo udaleniya shlaka pri lyubom agregatnom sostoyanii)

PERIODICAL: Sb. nauchn. tr. Magnitogorskiy gornometallurg. in-t. 1957, Nr 11, pp 77-84

ABSTRACT: The design of car-bottom slag pockets for open-hearth furnaces developed by the Magnitogorsk gornometallurg. in-t (Institute of Metallurgy and Mining) is described. The receiving element (RE) in the form of a lined metal box is mounted on a carriage, and is rolled out by a crane onto the pouring platform. The tops of the slag pockets rest on horizontal beams borne in turn by metal columns fixed into the foundation. Reinforcing wedges 50-80 mm high are provided between the carriage and the RE. After they are pulled out by a crane, the RE, which has fused to the roof of the slag pocket pulls away under the effect of its own weight. The RE is calculated to take 250-270 heats. The weight of a full RE is 200-250 t. The force to roll it clear

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Car-bottom Slag Pockets (cont.)

from the roof is 3-5 t, and the time required for replacement during repairs when the furnace is shut down, is 3-4 hours. For future open-hearth furnaces, a sunken type of slag pocket is proposed, with the RE removed to the slag dump along inclined tunnels below the pouring platform. The benefits provided by car-bottom slag pockets are: elimination of the need to drill and fire charges to clean slag pockets, complete mechanization of slag removal, elimination of the partitions between gas and air slag pockets, and reduction in repair time and in open hearth furnace down time.

A.D.

1. Equipment--Design 2. Equipment--Operation 3. Slags--Removal--Processes

Card 2/2

GORIN, V.K.

Effect of the melt weight on the output of open-hearth furnaces.
Izv.vys.ucheb.zav.; chern.met. no.4:162-166 '61. (MIRA 14:4)

1. Magnitogorskiy metallurgicheskiy kombinat.
(Open-hearth furnaces)

GORIN V.K.; NEMOLOCHNAYA, T.K.

Effect of certain factors on manganese loss during the deoxidation of steel in open hearth furnaces. Izv. vys. ucheb. zav.; chern. met. 7 no.12:41-43 '64 (MIRA 18:1)

1. Magnitogorskiy gornometallurgicheskiy institut.

SHAVKUNOV, N.D.; ZYRYANOV, M.F.; KOROSTELEV, P.V.; GORIN, V.N.

Production of cast, pipe-rolling equipment. Lit.proizv. no.[illegible] (MIRA 18:1)
0 '64.

L 60219-65 EWT(1)/EWG(r) Pe-4/Pe-5/Pq-4/Pg-4 GW UR/0286/65/000/012/0084/0084

ACCESSION NR: AP5019056

AUTHORS: Veselov, K. Ye.; Gorin, V. P.; Bagramyants, V. G.

TITLE: Gravimeter. Class 42, No. 172069

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 12, 1965, 84

TOPIC TAGS: gravimeter, gravitation effect, measuring instrument

ABSTRACT: This Author Certificate presents a gravimeter containing an elastic system of a rotary type and a damping mechanism (see Fig. 1 on the Enclosure). To regulate the damping process while the gravimeter is [illegible] the frame is

system of a rotary type and [illegible] regulate the damping process while the gravimeter is being leveled. The damping mechanism is made in the form of a frame with two windings. The frame is placed in the field of a permanent magnet and is rigidly connected to one another of the elastic system. Both windings are electrically connected to one another through an amplifier and a potentiometer. Orig. art. has: 1 diagram.

ASSOCIATION: none

SUBMITTED: 29May64 ENCL: 01 SUB CODE: IE, ES

NO REF SOV: 000 OTHER: 000

Card 1/2

L 60219-65

ACCESSION NR: AP5019056

ENCLOSURE: 01

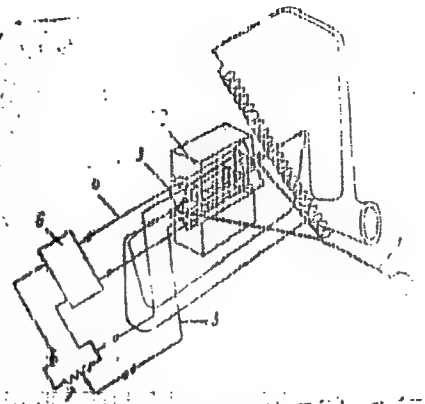


Fig. 1.

1- pendulum of the sensitive system; 2- permanent magnet; 3- frame; 4- first winding of the frame; 5- second winding of the frame; 6- amplifier; 7- potentiometer

Card 2/2

L 21794-66 EWT(l)/EWA(h) GW

ACC NR: AP6002922 (N) SOURCE CODE: UR/0286/65/000/024/0083/0083

AUTHORS: Naumenko-Bondarenko, I. I.; Gorin, V. P.; Usacheva, A. M.; Stepin, M. D.; Yurkovetskiy, S. G.; Akseenov, N. Z.; Yefremov, V. V.; Kolontsev, A. M.; Baryshev, Yu. M.; Lad'inn, V. M.; Fel'dman, Yu. S.

ORG: none

TITLE: A ground gravimeter. Class 42, No. 177106

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1965, 83

TOPIC TAGS: gravimetric analysis, measuring instrument, measurement accuracy gravimeter

ABSTRACT: This Author Certificate presents a ground gravimeter containing a quartz elastic sensitive system, units of distance control and control of the rotation angle of a micrometric screw, and an assembly of a photoelectric device with an illuminator. The design increases the precision of the measurements and makes possible the determination of the errors of the distance transmission. The unit of distance control in the gravimeter has precision multiple-turn linear potentiometers interconnected in a bridge circuit. One of the potentiometers is mounted in the gravimeter and the other on a control panel. The rotors of these potentiometers are connected with a tachometer. To reduce the temperature effects on the quartz sensitive system, the latter system is insulated from the photoelectric device.

SUB CODE: 08/ SUBM DATE: 21Jan64

UDC: 550.831

Card 1/1 ULR

GORIN, V.S., inzh.

Sand and glue filters and the field in which they are used. Gidr. stroi. 34 no.11:22-24 N '63. (MIRA 17:3)

USSR / Farm Animals. Swine. Q

Abs Jour : Ref Zhur - Biologiya, No 5, 1959, No. 21271

Author : Plotnikov, V. K.; Gorin, V. Ya.
Inst : Scientific Research Institute of South-East Agriculture
Title : The Fattening of Pigs with Dry Concentrated Feeds from Self-Feeders

Orig Pub : Byul. nauchno-tekhn. inform. N.-i. in-ta, s.-kh. Yugo-Vostoka, 1958, No 3, 6-7

Abstract : The pigs which consumed dry fodder from self-feeders, increased their weight during the 122 days of the experiment by 6.9 kg (10 percent) more, and expended 0.5 (10.7 percent) less feed units per 1 kg of weight gain than pigs which were fed the usual thickly mixed foddor. Finely ground fodder was consumed by the pigs more readily than coarsely ground fodder. -- A. D. Musin

Card 1/1

GORIN, V. Ya.

Well mechanized work. Transp. stroi. 14 no.9:36 S '64 (MIRA 18:1)

1. Zamestitel' predsedatelya postroyechnogo komiteta SU-328 Moskovskogo stroitel'no-montazhnogo tresta transportnogo stroitel'stva.

AP5003970

AUTHOR: Gorin, V. Ye.

TITLE: Effect of gamma rays, fast neutrons, and [illegible] chromosome aberrations in winter wheat

SOURCE: Sibirskoye otdeleniye. [illegible]

TOPIC TAGS: gamma ray, fast neutron dose, ethylen[illegible] mutation

ABSTRACT: Mutagenic agents--gamma rays, fast neutron[illegible] were found to differ in their capacity to induce chromosome aberrations in [illegible] wheat. The air-dried seed of the VIR-46 and Ul'yanovka varieties [illegible] approximately 15 times more [illegible] or ethylenimine was that [illegible] ranges than did the ionizing [illegible] that decreased the [illegible]

Card [illegible]

L 4P609-65
ACCESSION NR: AP5009970

induced approximately the same number of chromosome aberrations, a probable indication that the biological effects of the two kinds of radiation do not differ in principle. Orig. art. has: 2 tables.

ASSOCIATION: Institut tsitologii i genetiki, Sibirskoye otdeleniye AN SSSR. Novosibirsk (Institute of Cytology and Genetics, Siberian Department AN SSSR)

SUBMITTED: 02Aug63 ENCL: 00 SUB CODE:

NO REF SOV: 009 OTHER: 006

Card 2/2

AUTHORS: Gorin, Ye.A., and Mityagin,B.S. SOV/42-13-5-5/15

TITLE: On Norm Systems in a Countably Normed Space (O sistemakh norm v schetno-normirovannom prostranstve)

PERIODICAL: Uspekhi matematicheskikh nauk, 1958, Vol 13, Nr 5 pp 179-184 (USSR)

ABSTRACT: Let Φ be a countably normed space [1,2], let Φ_p be the complement of Φ with respect to the p-th norm. Let $\Phi = \bigcap_{p=1}^{\infty} \Phi_p$. Let Φ^* be the space conjugate to Φ. Every linear continuous functional $f \in \Phi^*$ has a finite order, i.e. for a certain p it holds $f \in \Phi_p^*$. To every $f \in \Phi^*$ there exists $\|f\|_0 = \lim_{p\to\infty} \|f\|_p$. The authors investigate the question given by Shilov,G.E.: When this boundary value equals zero (or is unequal to zero) ? It is asserted that this depends on the fact how the norm system in Φ is chosen from the class of the equivalent norm systems which define the same topology in Φ.
Theorem: In a complete space Φ there exist systems of norms $\{\|\varphi\|_p\}$ and $\{\|\varphi\|'_p\}$ defining the initial topology and having the property that for every $f \in \Phi^*$ it holds $\|f\|_0 = \lim_{p\to\infty} \|f\|_p \cdot = 0$

Card 1/2

and for every $f \in \phi^*$, $f \neq 0$ it holds $\|f\|_0' = \lim_{p\to\infty} \|f\|_p' > 0$.

The proof of the theorem bases on seven lemmas.
There are 5 references, 1 of which is Soviet, 1 American, and 3 French.

SUBMITTED: February 21, 1957

69762

S/155/59/000/02/003/036

16.4600

AUTHOR: Gorin, Ye.A.

TITLE: On a Characteristic Property of the Ring of Continuous Functions

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye nauki, 1959, No. 2, pp, 19-21

TEXT: Theorem : Let R be a complete complex normed ring with the norm

$$\|x\| = \max_{t \in S} |x(t)|$$

which corresponds to the uniform convergence on the set S of the maximum ideals of R. If to every closed set $F \subset S$, to every $x \in R$ and to a real $\varepsilon > 0$ there exists an element $x_\varepsilon \in R$, such that it holds

(1) $$\|x_\varepsilon\| < \max_{t \in F} |x(t)| + \varepsilon$$

(2) $$x_\varepsilon(t) = x(t) \qquad (t \in F)$$

then R is the complete ring of all continuous functions on S, i.e. $R = C(S)$.

P.S. Uryson is mentioned in the paper. The author thanks Professor G.Ye. Shilov for the guidance of the paper.

Card 1/2

69762

On a Characteristic Property of the Ring of Continuous Functions

S/155/59/000/02/003/036

There are 5 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova (Moscow State University imeni M.V. Lomonosov)

SUBMITTED: February 27, 1959

Card 2/2

GORIN, Ye.A.

Asymptotic properties of polynomials and algebraic functions of several variables. Usp. mat. nauk 16 no.1:91-118 Ja-F '61. (MIRA 14:6)

(Polynomials) (Functions of several variables)

GORIN, Ye.A.; GRUSHIN, V.V.

Definition of hypoelliptic equations. Usp. mat. nauk 16 no.5:163-166 S-O '61. (MIRA 14:10)
(Differential equations, Partial)

GORIN, Ye.A.

Partially hypoelliptic equations and polynomials. Dokl. AN SSSR 140 no.1:27-28 S-O '61. (MIRA 14:9)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom P.S.Aleksandrovym.
(Differential equations) (Polynomials)

MANDEL'BROYT, S.[Mandel'brojt, Shulim]; GORIN, Ye.A.[translator]; DYNIN, A.S.[translator]; MITYAGIN, B.S.[translator]; PLUZHNIKOVA, N.I., red.; PRIDANTSEVA, S.V., tekhn. red.

[Closed theorems and theorems of composition]Teoremy zamknutosti i teoremy kompozitsii; zapis' lektsii i perevod vypolneny E.A.Gorinym, A.S.Dyninym, B.S.Mitiaginym. Moskva, Izd-vo inostr. lit-ry, 1962. 153 p. (MIRA 16:1)
(Fourier transformations) (Series, Taylor's)

GORIN, Ye.A.

A sufficient condition for correctness. Vest. Mosk. un. Ser. 1:Mat., mekh. no.6:29-33 N-D '62. (MIRA 16:2)

1. Kafedra teorii funktsiy i funktsional'nogo analiza Moskovskogo universiteta.
(Operators (Mathematics))

GORIN, Ye.A.

Partially hypoelliptic differential equations in partial derivatives with constant coefficients. Sib. mat. zhur. 3 no.4:500-526 Jl-Ag '62. (MIRA 15:7)

(Differential equations, Partial)

GORIN, Ye.A.

Characteristic of a ring of all continuous functions on a bicompact. Dokl. AN SSSR 142 no.4:781-784 F '62.
(MIRA 15:2)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
Predstavleno akademikom P.S.Aleksandrovym.
(Functions, Continuous)
(Rings(Algebra))

S/055/63/000/002/001/004
D251/D308

AUTHORS: Gorin, Ye. A., and Grushin, V. V.

TITLE: Differential equations whose solutions are smoothed out on differentiation

PERIODICAL: Moscow. Universitet. Vestnik. Seriya I. Matematika, Mekhanika, no. 2, 1963, 25-32

TEXT: The author considers a class of functions of many variables for which a partial derivative may be smoother than the function itself. Theorem 1. Let G be some finite region and q a non-negative integer. $P(s) = P(s_1,\ldots,s_n)$ is defined as a polynomial in n complex variables $s_j = \sigma_j + i\tau_j$ $(1 \leqslant j \leqslant n)$, and $N(P)$ is the manifold of all complex zeros of $P(s)$. $P(D)$ is defined as the operator

Card 1/3

Differential equations...

$$P(D) = P\left(\frac{1}{i}\frac{\partial}{\partial x_1}, \ldots, \frac{1}{i}\frac{\partial}{\partial x_n}\right).$$

If there exists $k > 0$ such that for every q-times continuously differentiable solution in G of the equation

$$P(D)u(x) = 0 \qquad (4)$$

the function $\partial^k u / \partial x_1^k$ possesses continuous derivatives up to the $(q+1)$th order, then for the manifold $N(P)$,

$$|\tau| \geq a\,|\sigma|^{\gamma}\,|s_1|^{\gamma_1} - b \qquad (5)$$

where $a, b, \gamma, \gamma_1 > 0$. The proof is based on some general considerations connected with Banach's theorem and on the

Card 2/3

Differential equations...

Seidenberg-Tarski theorem, (A. Seidenberg, Ann. Math. Ser. v. 60, 2, 1954, 365-374; Ye. Y. Gorin, UMN, no. 1, 1961, 91-118), and on the application of a Fourier transformation and Cauchy's theorem. Hence, Theorem 2: If on the manifold $N(P)$ the inequality Eq. (5) is satisfied, then any solution of Eq. (4) will be smoothed on differentiation with respect to x_1.

Theorem 3. If the conditions of Theorem 2 hold, then for $u(x)$ to be smoothed on differentiation with respect to x_1 it is necessary and sufficient that $\psi(x) = P(D)u(x)$ is smoothed on differentiation with respect to x_1. There is 1 figure.

[Abstracter's note: In the formula for s_j, $(1 \leqslant j \leqslant n)$ is incorrectly given as $(1 \leqslant i \leqslant n)$.]

ASSOCIATION: Kafedra teorii funktsiy i funktsional'nogo analiza (Department of the Theory of Functions and Functional Analysis)

SUBMITTED: May 7, 1962

Card 3/3

GORIN, Ye.A.

"Fourier analysis on groups" by W. Rudin. Reviewed by E.A.Gorin. Zhur. vych. mat i mat fiz. 3 no.6:1142-1143 N-D 63. (MIRA 17:1)

VILENKIN, N.Ya.; GORIN, Ye.A.; KOSTYUCHENKO, A.G.; KRASNOSEL'SKIY, M.A.; KREYN, S.G.; MASLOV, V.P.; MITYAGIN, B.S.; PETUNIN, Yu.I.; RUTITSKIY, Ya.B.; SOBOLEV, V.I.; STETSENKO, V.Ya.; FADDEYEV, L.D.; TSITLANADZE, E.S.; LYUSTERNIK, L.A., red.; YANPOL'SKIY, A.R., red.; GAPOSHKIN, V.F., red.

[Functional analysis] Funktsional'nyi analiz. [By] N.IA. Vilenkin i dr. Moskva, Izd-vo "Nauka," 1964. 424 p. (MIRA 17:6)

L 45819-65 EWP(d)/T IJP(c)

ACCESSION NR AM4043734 BOOK EXPLOITATION S/ 30 P/1

Vilenkin, N. YA.; Gerin, YE. A.; Kostyuchenko, [illegible]; Krasnosel'skiy, M. A.; [illegible]; Maslov, V. P.; Mityagin, [illegible]; Petunin, [illegible]; Rutitskiy, [illegible]

Functional Analysis [Funktsional'nyy analiz], [illegible]. Index. Errata slip inserted. [illegible]. Spravochnaya matematicheskaya biblioteka

TOPIC TAGS: functional analysis, mathematics, operator [illegible], linear [illegible] mechanics, Hilbert space, Banach space, linear [illegible]

PURPOSE AND COVERAGE: This issue in a series of Handbooks [illegible] the Mathematical Library contains much material grouped basically around the theory of [illegible] and operator equations. It presents the [illegible] and methods of [illegible] functional analysis, theory of operators in [illegible] the theory of nonlinear operator equations [illegible] equations in partial derivatives, [illegible] is developed on the basis [illegible] of generalized functions [illegible] the mathematical facts there [illegible]

Card 1/2

L 45809-63
ACCESSION NR AM4043734

without proofs. Main attention is given to concepts without excessive detail. The book is intended for mathematicians, mechanical engineers, and physicists. It [illegible] much of value for students and graduate students.

TABLE OF CONTENTS [abridged]:

SUBMITTED: 06Feb64 SUB CODE: MA

NO REF SOV: 038 OTHER: 012

Card 2/2

GORIN, Ye.A.

Solvability of the Cauchy problem in a class of quadratically integrable functions for systems of partial differential equations with constant coefficients. Vest. Mosk. un. Ser. 1: Mat., mekh. 20 no.4:6-12 Jl-Ag '65. (MIRA 18:9)

1. Kafedra teorii funktsiy i funktsional'nogo analiza Moskovskogo gosudarstvennogo universiteta imeni M.V. Lomonosova.

GORIN, Ye.A.

Moduli of the reversible elements of a normalized algebra. Vest. Mosk. un. Ser. 1: Mat., mekh. 20 no.5:35-39 S-O '65. (MIRA 18:9)

1. Kafedra teorii funktsiy i funktsional'nogo analiza Moskovskogo universiteta.

SHILOV, Georgiy Yevgen'yevich; GORIN, Ye.A., red.

[Mathematical analysis; second special course] Matematicheskii analiz; vtoroi spetsial'nyi kurs. Moskva, Nauka, 1965. 327 p. (MIRA 18:11)

GORIN, A.A.; GORIN, Ye. A.

Solvability of the Cauchy problem with finite initial data.
Dif. urav. 1 no. 12:1640-1646 D '65. (MIRA 18:12)

1. Institut tochnoy mekhaniki i vychislitel'noy tekhniki AN SSSR i Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
Submitted Febr. 17, 1965.

GORIN, Ye. I.

Signalization of emergency level in water-emptying units. Vod. i san. tekh. no.3:11-13 Mr '57. (MLRA 10:6)
(Water meters)

GORIN, Ye.I.; KHRUSLOV, L.V.

Mechanized cleaning of filters. Vod. i san. tekh. no.8:35 Ag '58. (MIRA 11:9)
(Filters and filtration)

ANDRIANOV, V. N., doktor tekhn. nauk; GORIN, Ye. I., inzh.

Certain features of using synchronous electric motors in agriculture. Mekh. i elek. sots. sel'khoz. 20 no.6:47-50 '62. (MIRA 16:1)

1. Moskovskaya sel'skokhozyaystvennaya akademiya im. K. A. Timiryazeva (for Andrianov). 2. Vsesoyuznyy nauchno-issledovatel'skiy institut elektrifikatsii sel'skogo khozyaystva (for Gorin).

(Electric motors, Synchronous)
(Electricity in agriculture)

GORIN, Ye. I.

"Experience of Operating Tunnel Cable Layers," "Operation of Cable Networks" (Eksploatatsiya kabeley i kabel'nykh setey), Gosenergoizdat, 1949, 384 pp.

~~USSR~~, Ye. I.

GORIN, Ye I

USSR/Electricity - Traction, Electric Cables May 51

"Cables for 825 Volts and Their Protection," Ye. I. Gorin, K. N. Oskolkov, Engineers, Moscow Subway System

"Elektrichestvo" No 5, pp 71-74

Gives brief description of circuit and layout of dc cable network supplying the contact network of the Moscow subway. Examines circuits now in operation for protection of 825-v dc cable. Submitted 13 Dec 50.

189T30

GORIN, Ye., inzhener.

The Leningrad subways. Tekh.mol.24 no.1/2:33 Ja-F '56. (MIRA 9:7)
(Leningrad--Subways)

GORIN, Ya.; TARAKANOV, I.

Visiting Moscow subway. IUn. tekh. no.4:14-18 Ap '57. (MLRA 10:6)
(Moscow--Subways)

GORIN, Ye., ekskursovod; TARAKANOV, I., ekskursovod.

Visiting Moscow subway. IUn.tekh. no.6:22-26 Je '57. (MLRA 10:7)
(Moscow--Subways)

GORIN, Ye.I.

Controlling dust in subways. Gor. khoz. Mosk. 32 no.9:23-25 S '58. (MIRA 11:9)

1.Nachal'nik sanitarno-tekhnicheskoy sluzhby Moskovskogo metropolitena imeni V.I. Lenina.
(Moscow--Subways) (Dust--Removal)

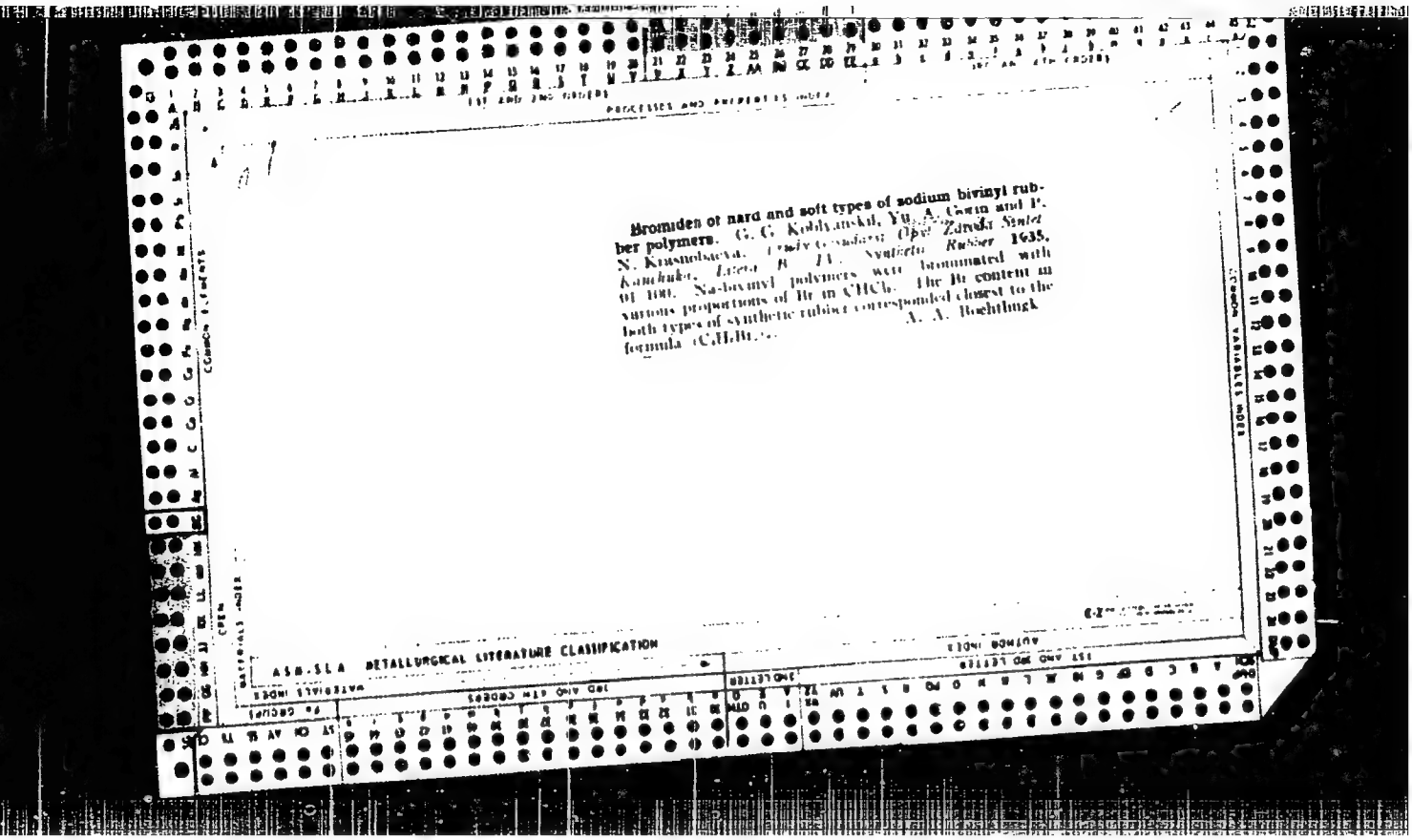
GORIN, Yu. A.

(A) Laboratory furnace and experimental equipment for, and (B) performance of the catalyst used in, the preparation of divinyl from alcohol. (C) Alcohols of the series C_5 and C_6, (D) aldehydes and ketones, and (E) piperylene and amylene in the products of catalytic decomposition of alcohols by the S. V. Lebedev method. (F) Utilisation of ψ-butylene obtained in divinyl synthesis from alcohol. S. V. Lebedev [with N. Z. Andreev, J. A. Gorin, I. K. Gorn, S. G. Kibirkshtis, G. G. Kobljanski, A. M. Kogan, A. V. Kozlovskaja, V. P. Krause, M. A. Krupuishev, I. A. Livschitz, O. M. Neimark, G. N. Sibirjakova, J. M. Slobodin, and I. A. Volshinski] (Trud. Gosud. Op. Zav. Sintet. Kautschuka, 1934, B, III, 7--16, 16-40, 41-44, 44-45, 50-68, 68-85).-(A) Laboratory and micro- (capacity 5 c. c. of EtOH)- furnaces and a furnace with reaction chambers of 1 m. length are described. EtOH is preheated to 400-525°, passed over the catalyst, the products are cooled, and uncondensed gases absorbed (e.g., in turpentine). $(CH_2{:}CH)_2$ and ψC_4H_8 are recovered by fractionating the solution and removing MeCHO by passing through 50% aq. NaOH. (B) The catalyst (composition not given), which is preferably of worm-like shape (diameter 1-3 mm.) and not compressed, consists of a dehydrogenating and a dehydrating substance (cf. B., 1930, 939). The furnace is of Cu or enamelled or Al-plated Fe; chambers of length 1 m. and 3 m. are compared. The unfavourable effect of Et_2O and H_2O, and the slightly favourable effect of 5-7% of MeCHO, are noted. Spent catalyst, which causes increase in the H_2, MeCHO, and BuOH yields, is regenerated by admitting air into the catalyst chamber. (C) Normal primary saturated alcohols (C_{5-6}) are obtained. (D) $COMe_2$, MeCHO, but-, croton-, valer-, hex-, and oct-aldehydes are obtained. (E) The condensate from the prep. and the residue from the rectification of $(CH_2{:}CH)_2$ are rectified, the fractions of b.p. 30-45° isolated and united, and fractions of b.p. 35-37° and 37-40° collected. The diene and olefine (in each fraction) are brominated, the bromides separated, and piperylene and amylene regenerated. Condensation reactions are also described.

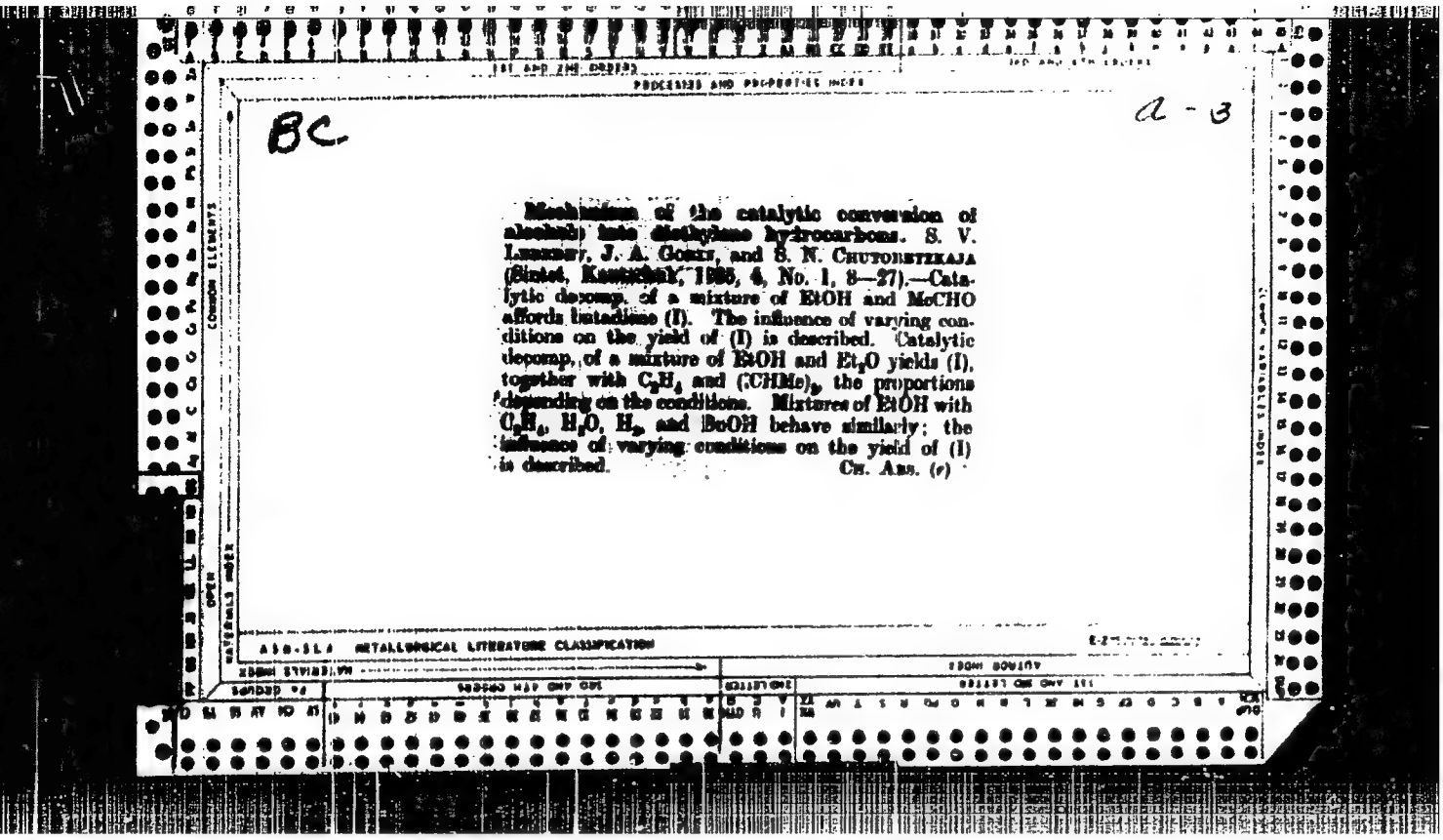
(continued on Page 2)

DOGADKIN, B.

(F) ψ-C_4H_8 obtained as a by-product in the prep. of synthetic rubber from $(CH_2{:}CH)_2$ is treated in the liquid phase with 72-75% H_2SO_4 to yield 83% of $Bu^{\beta}OH$ and thence (with Ac_2O and fused NaOAc) $Bu^{\beta}OAc$. $(CH_2{:}CH)_2$ in ψ-C_4H_8 could be removed by Na but not by H_2SO_4. The use of Cu or Pb apparatus is recommended. CH. ABS. (c)



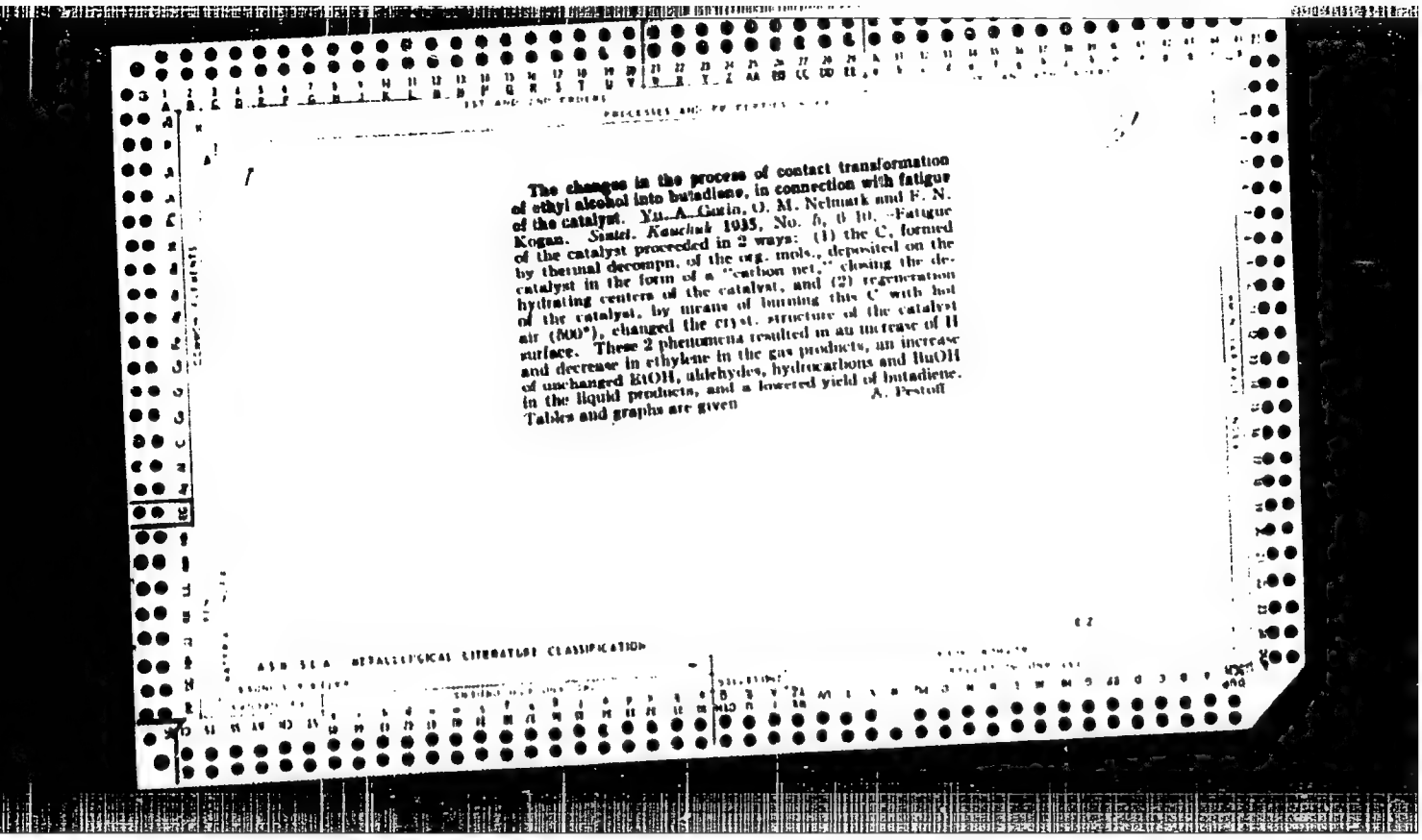
Bromiden of hard and soft types of sodium divinyl rubber polymers. G. G. Kolbyanskii, Yu. A. Gavin and P. N. Krasnobaeva. *Trudy Gosudarst. Opyt. Zavoda Sinteticheskogo Kauchuka, Leningrad, No. 11, 1935, Synthetic Rubber 1936*, 91-101. Na-divinyl polymers were brominated with various proportions of Br in $CHCl_3$. The Br content in both types of synthetic rubber corresponded closest to the formula $(C_4H_6Br_2)_n$. A. A. Boehringk



BC

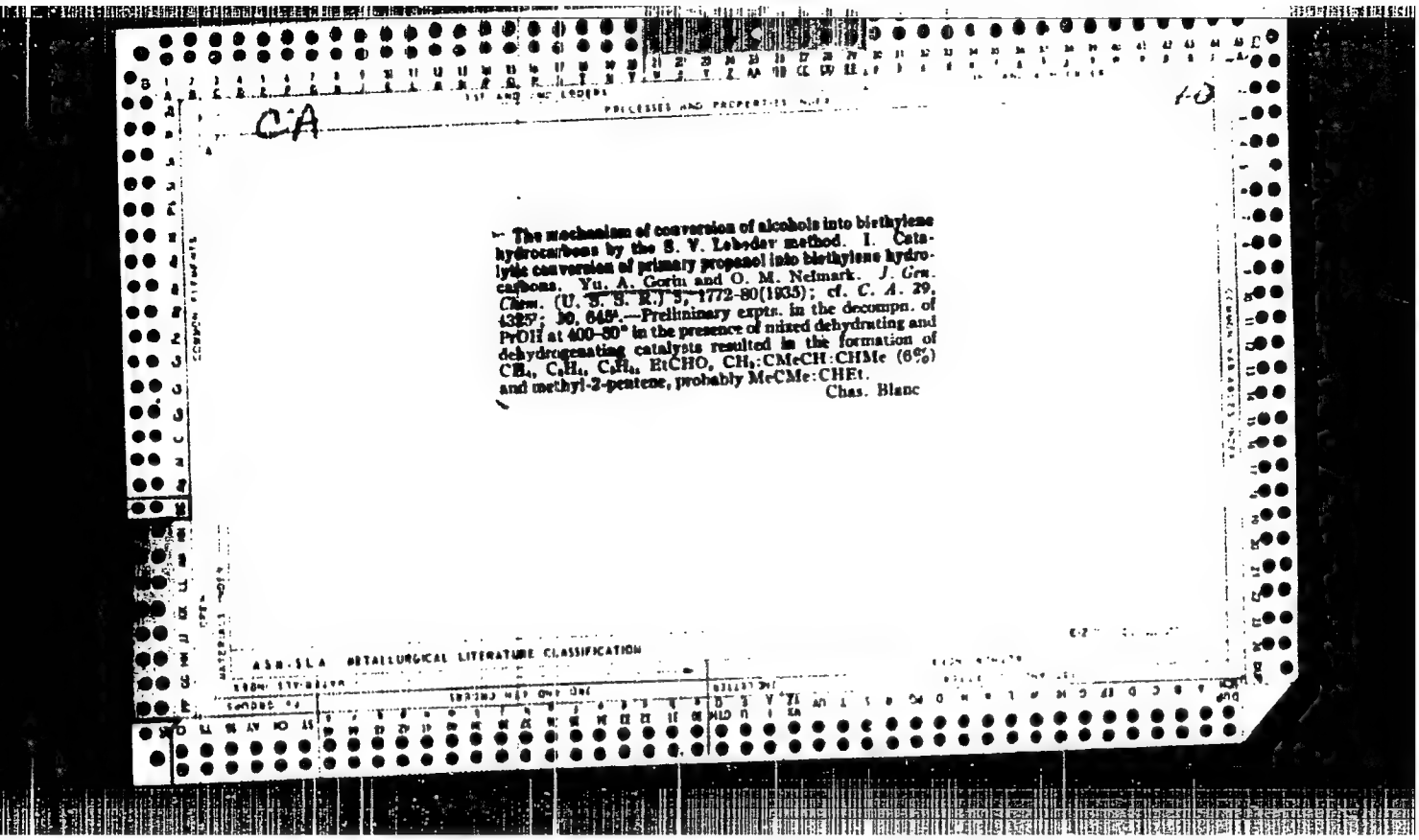
a-3

Mechanism of the catalytic conversion of alcohols into ethylene hydrocarbons. S. V. LEBEDEV, J. A. GORIN, and S. N. CHUTORETZKAJA (Zintet, Kantchuk, 1935, 4, No. 1, 8—27).—Catalytic decomp. of a mixture of EtOH and MeCHO affords butadiene (I). The influence of varying conditions on the yield of (I) is described. Catalytic decomp. of a mixture of EtOH and Et_2O yields (I), together with C_2H_4 and $(CHMe)_2$, the proportions depending on the conditions. Mixtures of EtOH with C_2H_4, H_2O, H_2, and BuOH behave similarly; the influence of varying conditions on the yield of (I) is described. CH. ABS. (e)



The changes in the process of contact transformation of ethyl alcohol into butadiene, in connection with fatigue of the catalyst. Yu. A. Gurin, O. M. Nelmark and F. N. Kogan. *Sintet. Kauchuk* 1935, No. 5, 6 ill. —Fatigue of the catalyst proceeded in 2 ways: (1) the C, formed by thermal decompn. of the org. mols., deposited on the catalyst in the form of a "carbon net," closing the dehydrating centers of the catalyst, and (2) regeneration of the catalyst, by means of burning this C with hot air (600°), changed the cryst. structure of the catalyst surface. These 2 phenomena resulted in an increase of H and decrease in ethylene in the gas products, an increase of unchanged EtOH, aldehydes, hydrocarbons and EtOH in the liquid products, and a lowered yield of butadiene. Tables and graphs are given

A. Prostoff

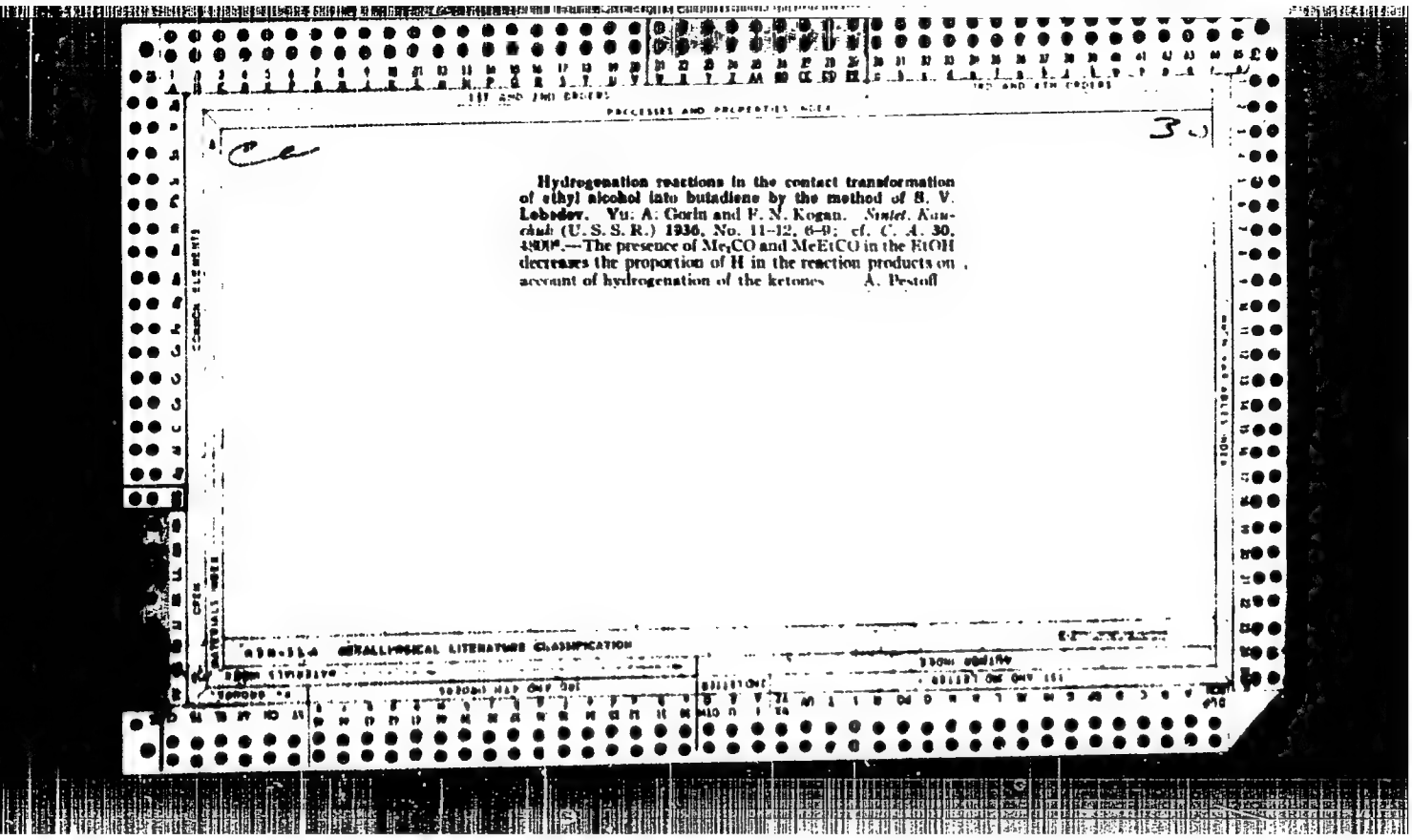


CA

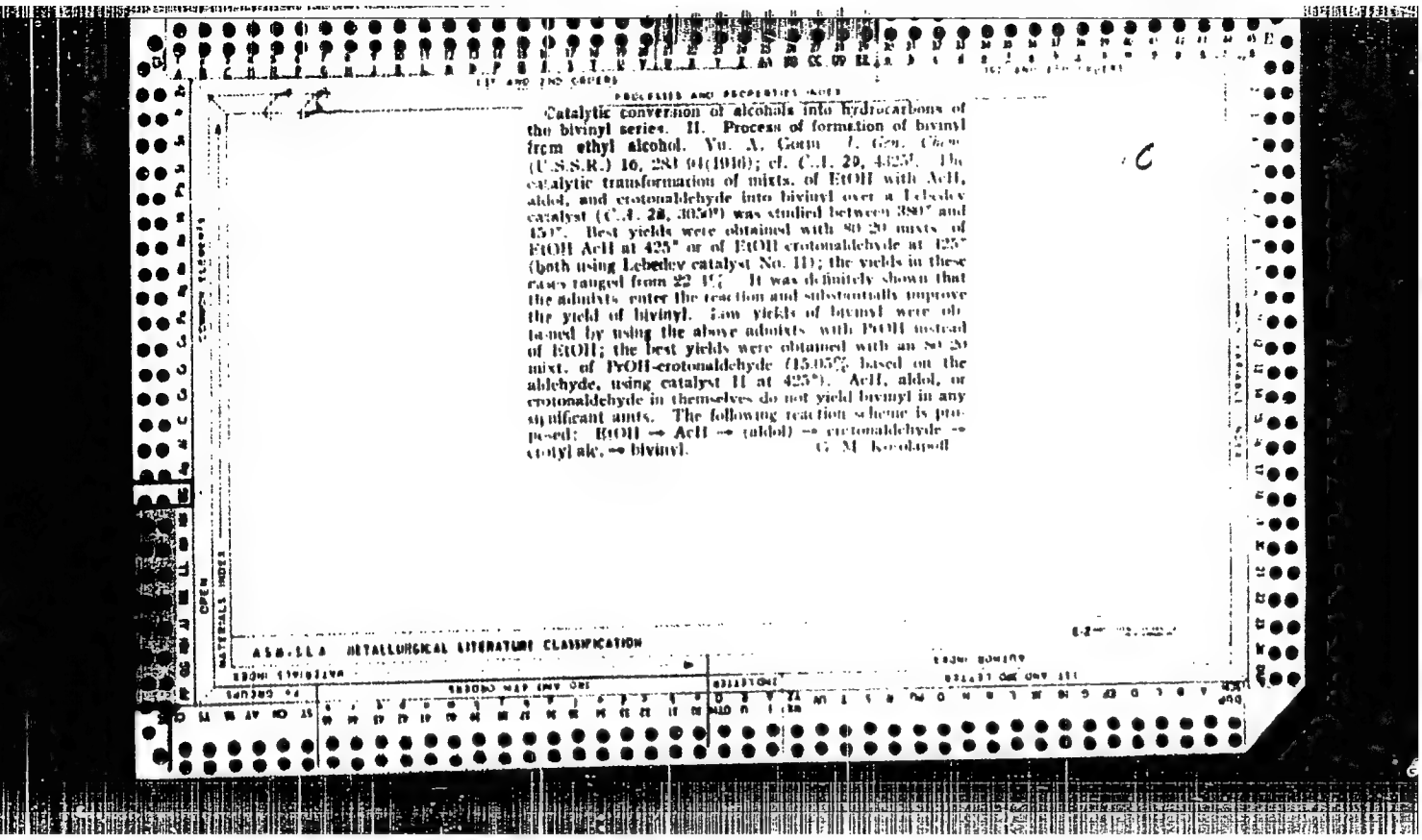
The mechanism of conversion of alcohols into biethylene hydrocarbons by the S. V. Lebedev method. I. Catalytic conversion of primary propanol into biethylene hydrocarbons. Yu. A. Gorin and O. M. Nefmark. *J. Gen. Chem.* (U. S. S. R.) 5, 1772-80(1935); cf. *C. A.* 29, 4285; 30, 648⁹.—Preliminary expts. in the decompn. of PrOH at 400–50° in the presence of mixed dehydrating and dehydrogenating catalysts resulted in the formation of CH_4, C_2H_4, C_3H_6, EtCHO, CH_2:CMeCH:CHMe (6%) and methyl-2-pentene, probably MeCMe:CHEt.

Chas. Blanc

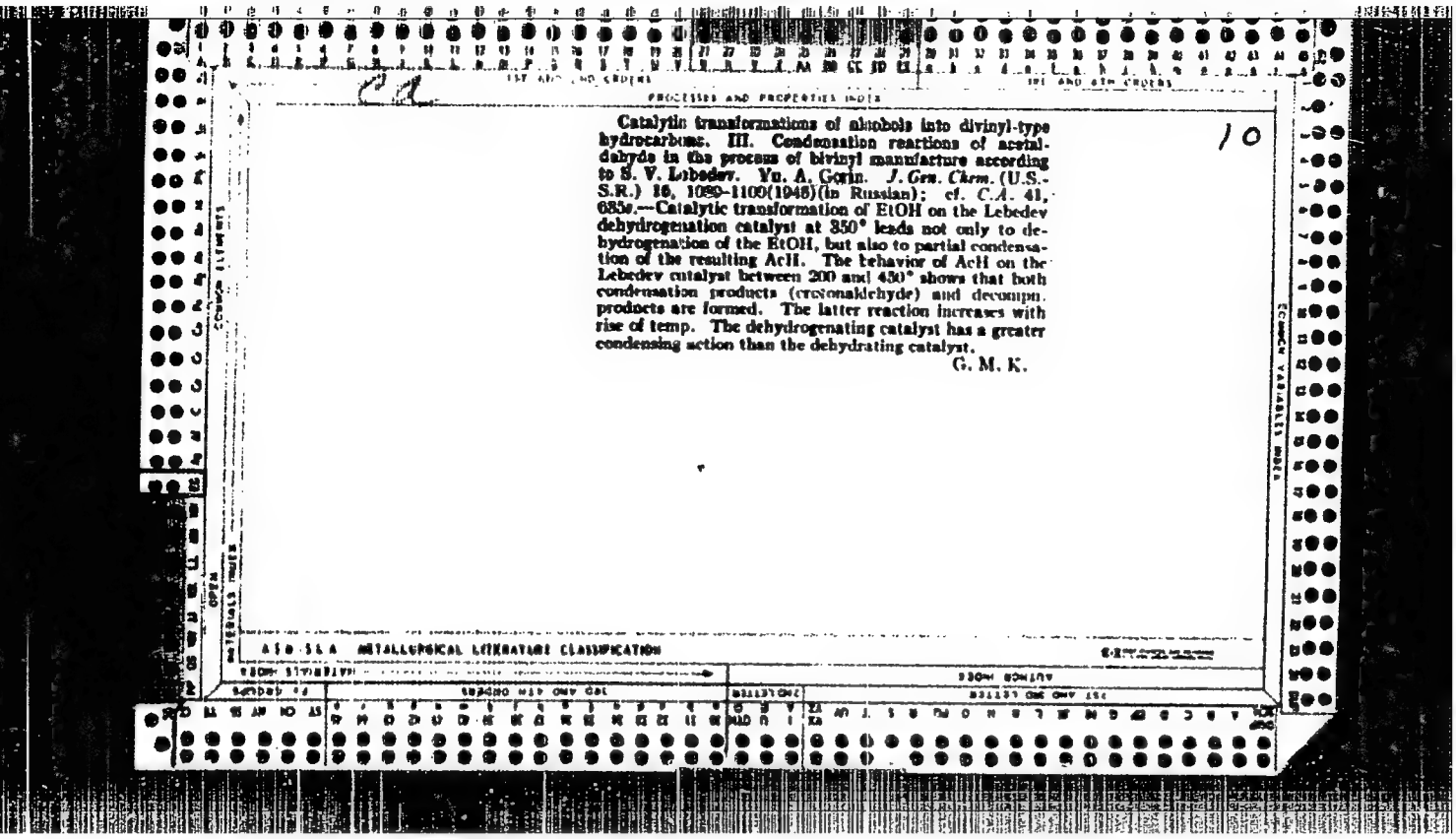
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Hydrogenation reactions in the contact transformation of ethyl alcohol into butadiene by the method of S. V. Lebedev. Yu. A. Gorin and F. N. Kogan. *Sintet. Kauchuk* (U. S. S. R.) 1936, No. 11–12, 6–9; cf. *C. A.* 30, 4900⁸.—The presence of Me_2CO and MeEtCO in the EtOH decreases the proportion of H in the reaction products on account of hydrogenation of the ketones. A. Pestoff



Catalytic conversion of alcohols into hydrocarbons of the divinyl series. II. Process of formation of divinyl from ethyl alcohol. Yu. A. Gorin. *J. Gen. Chem.* (U.S.S.R.) **10**, 281-91(1940); cf. *C.A.* **29**, 4325. The catalytic transformation of mixts. of EtOH with AcH, aldol, and crotonaldehyde into divinyl over a Lebedev catalyst (*C.A.* **28**, 3050) was studied between 380° and 451°. Best yields were obtained with 80:20 mixts. of EtOH-AcH at 425° or of EtOH-crotonaldehyde at 425° (both using Lebedev catalyst No. II); the yields in these cases ranged from 22 to 47%. It was definitely shown that the adducts enter the reaction and substantially improve the yield of divinyl. Low yields of divinyl were obtained by using the above adducts with PrOH instead of EtOH; the best yields were obtained with an 80:20 mixt. of PrOH-crotonaldehyde (15.05% based on the aldehyde, using catalyst II at 425°). AcH, aldol, or crotonaldehyde in themselves do not yield divinyl in any significant amts. The following reaction scheme is proposed: EtOH → AcH → (aldol) → crotonaldehyde → crotyl alc. → divinyl. G. M. Kosolapoff



Catalytic transformations of alcohols into divinyl-type hydrocarbons. III. Condensation reactions of acetaldehyde in the process of divinyl manufacture according to S. V. Lebedev. Yu. A. Gorin. *J. Gen. Chem.* (U.S.S.R.) 16, 1099–1109(1946)(in Russian); cf. *C.A.* 41, 685i.—Catalytic transformation of EtOH on the Lebedev dehydrogenation catalyst at 350° leads not only to dehydrogenation of the EtOH, but also to partial condensation of the resulting AcH. The behavior of AcH on the Lebedev catalyst between 200 and 450° shows that both condensation products (crotonaldehyde) and decompn. products are formed. The latter reaction increases with rise of temp. The dehydrogenating catalyst has a greater condensing action than the dehydrating catalyst.

G. M. K.

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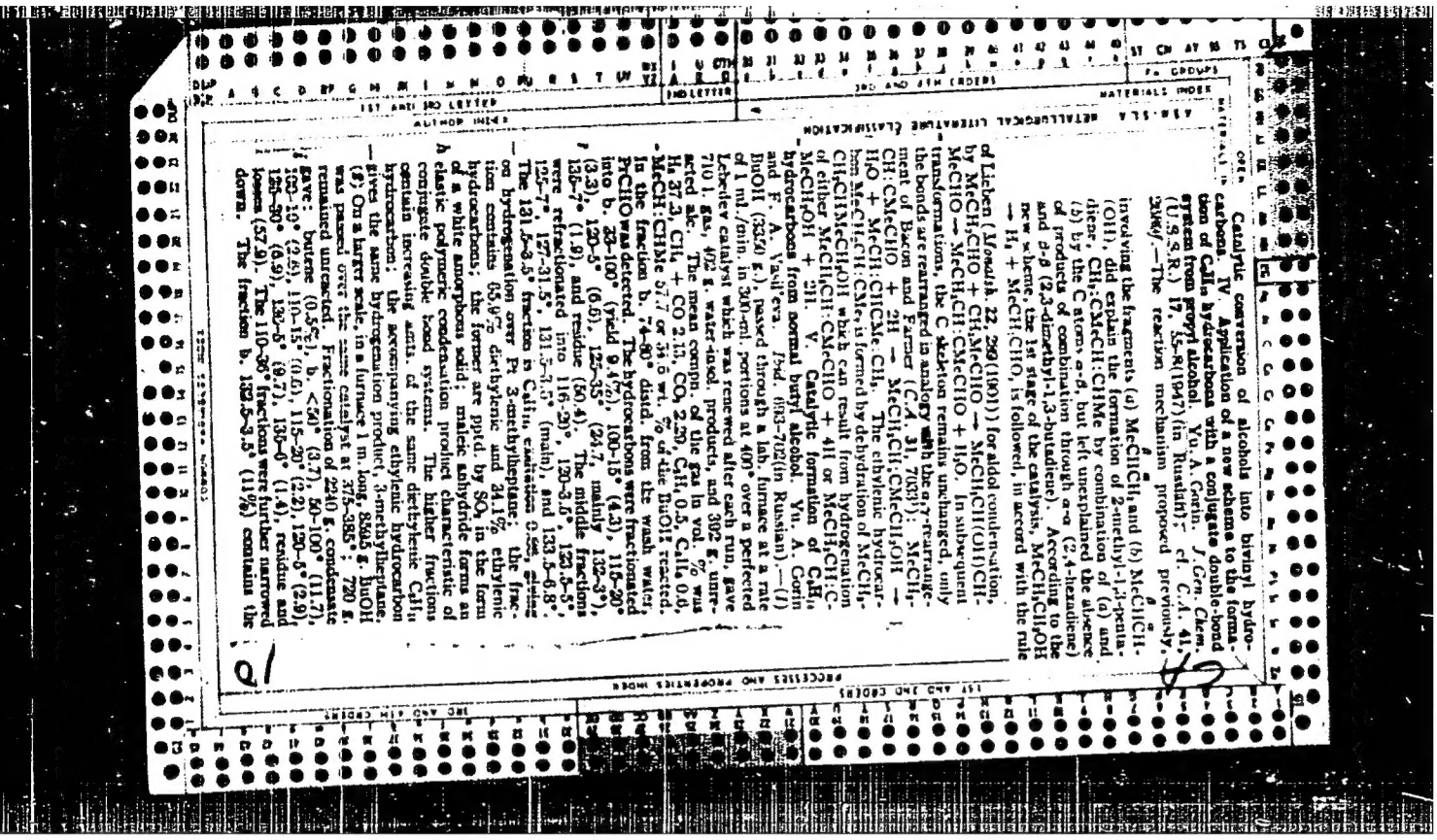
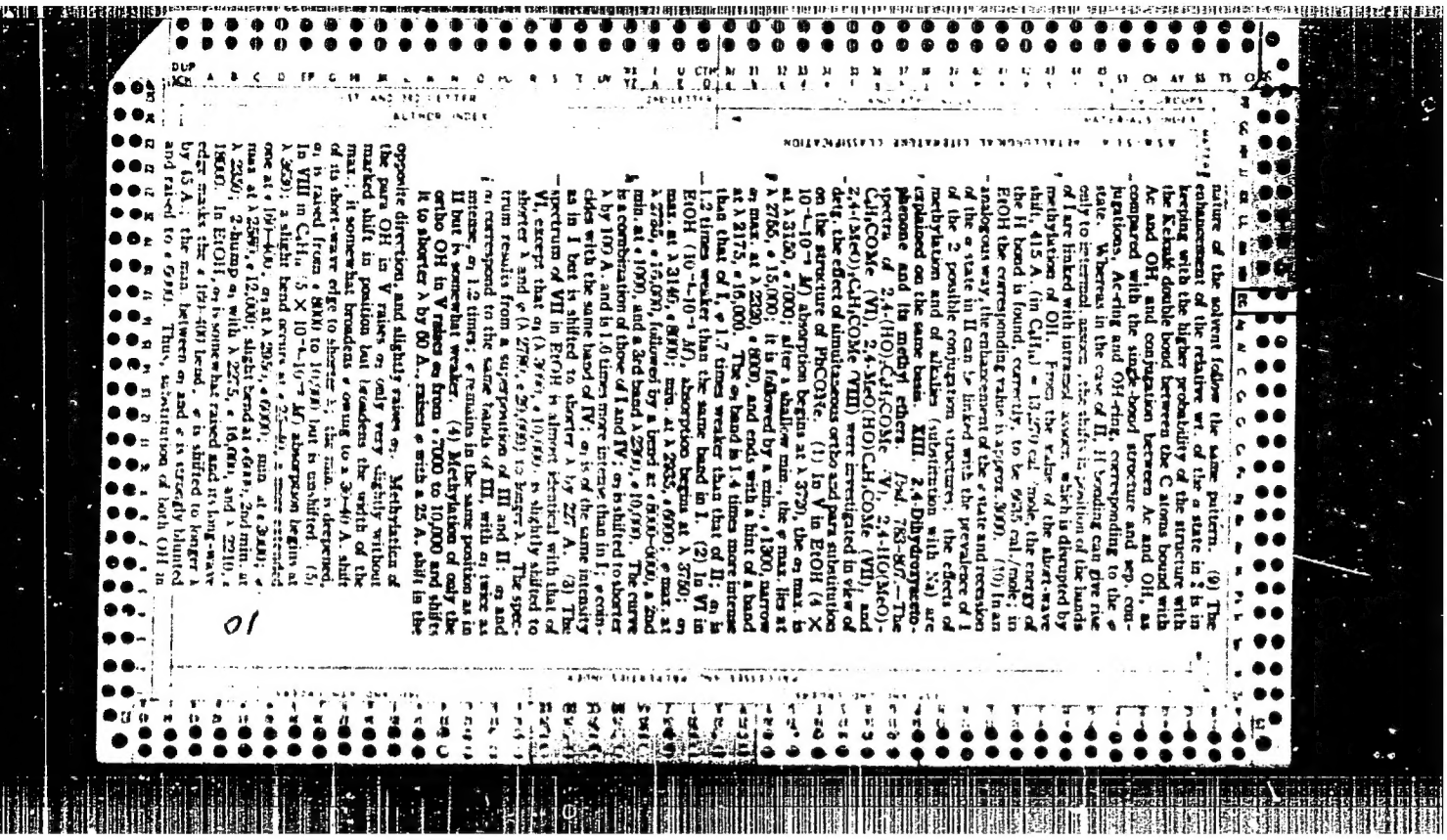


Catalytic conversion of alcohols into vinyl hydrocarbons. IV. Application of a new scheme to the formation of C_4H_6 hydrocarbons from propyl alcohol. Yu. A. Gorin. *J. Gen. Chem. U.S.S.R.* 17, 35–8(1947)(in Russian); cf. *C.A.* 41, 2306*f*.—The reaction mechanism proposed previously involving the fragments (*a*) $MeCHCH_2$ and (*b*) $MeCH{:}CH{-}CH_2OH$, did explain the formation of 2-methyl-1,3-pentadiene, $CH_2{:}CMeCH{:}CHMe$ by combination of (*a*) and (*b*) by the C atoms *a–b*, but left unexplained the absence of products of combination through *a–a* (2,4-hexadiene) and *b–b* (2,3-dimethyl-1,3-butadiene). According to the new scheme, the 1st stage of the catalysis, $MeCHCH_2OH \rightarrow H_2 + MeCH{:}CHO$, is followed, in accord with the rule of Lieben (*Monatsh.* 22, 269(1901)) for aldol condensation, by $MeCH_2CHO + CH_3MeCHO \rightarrow MeCH_2CH(OH)CHMeCHO \rightarrow MeCH_2CH{:}CMeCHO + H_2O$. In subsequent transformations, the C skeleton remains unchanged, only the bonds are rearranged in analogy with the α,γ-rearrangement of Bacon and Farmer (*C.A.* 31, 7033): $MeCH_2CH{:}CMeCHO + 2H \rightarrow MeCH_2CH{:}CMeCH_2OH \rightarrow H_2O + MeCH{:}CHCMe{:}CH_2$. The ethylenic hydrocarbon $MeCH_2CH{:}CMeCH_2OH$ which can result from hydrogenation of either $MeCH_2CH{:}CMeCHO + 4H$ or $MeCH_2CH{:}CMeCH_2OH + 2H$. V. Catalytic formation of C_4H_6 hydrocarbons from normal butyl alcohol. Yu. A. Gorin and F. A. Vasil'eva. *Ibid.* 693–702(in Russian).—(*I*) BuOH (3350 g.), passed through a lab. furnace at a rate of 1 ml./min. in 300-ml. portions at 400° over a perfected Lebedev catalyst which was renewed after each run, gave 710 l. gas, 402 g. water-insol. products, and 302 g. unreacted alc. The mean comn. of the gas in vol. %: H_2 37.2, $CH_4 + CO$ 2.15, CO_2 2.20, C_2H_4 0.5, C_4H_6 0.6, $MeCH{:}CHMe$ 57.7 or 34.6 wt. % of the BuOH reacted. In the fraction b. 74–80° distd. from the wash water, $PrCHO$ was detected. The hydrocarbons were fractionated into b. 33–100° (yield 9.4%), 100–15° (4.3), 115–20° (3.3), 120–5° (6.6), 125–35° (34.7, mainly 132–3°), 135–7° (1.9), and residue (50.4). The middle fractions were refractionated into 116–20°, 120–3.6°, 123.5–5°, 125–7°, 127–31.5°, 131.5–7.5° (main), and 133.5–6.8°. The 131.5–3.5° fraction n Calfin. exaltation 0.66, gives on hydrogenation over Pt 3-methylheptane; the fraction contains 65.9% diethylenic and 34.1% ethylenic hydrocarbons; the former are ppted. by SO_2 in the form of a white amorphous solid; maleic anhydride forms an elastic polymeric condensation product characteristic of conjugate double bond systems. The higher fractions contain increasing amts. of the same diethylenic C_6H_{10} hydrocarbon; the accompanying ethylenic hydrocarbon gives the same hydrogenation product, 3-methylhexane. (*II*) On a larger scale, in a furnace 1 m. long, 3365 g. BuOH was passed over the same catalyst at 375–385°; 720 g. remained unreacted. Fractionation of 2240 g. condensate gave: butene (0.5%), b. <50° (3.7), 50–100° (11.7), 100–10° (2.6), 110–15° (1.6), 115–20° (2.2), 120–5° (2.9), 125–30° (6.9), 130–5° (9.7), 135–0° (1.4), residue and losses (57.9). The fraction b. 132.5–3.5° (11.9%) contains the

max. amt. of dienic hydrocarbons (80.5%): their total amt. is 3.1% of the BuOH passed, 3.4% of the BuOH reacted. Oxidation with $KMnO_4$ gave AcOH, MeCOEt, and small amts. of HCO_2H and $EtCO_2H$. The C_8H_{14} fraction evidently represents a mixt. of several isomers: EtCMe.CHCH:CHMe, accounting for MeCOEt and AcOH; MeCH:CMeCH:CHEt, accounting for the AcOH and $EtCO_2H$; $EtC(:CH_2)CH:CHEt$, giving on oxidation HCO_2H, $EtCO_2H$, and $EtCOCO_2H$ which is further oxidized into $EtCO_2H$ and CO_2; the 3-methyl-3,5-heptadiene and 3-methyl-2,4-heptadiene are evidently present in larger amts. than the 2-ethyl-1,3-hexadiene. The fraction b. 125–30° reacts with HBr to give $C_8H_{15}Br$, b_{15} 70–3°, and $C_8H_{16}Br_2$, b_{11} 108–11°, close to b_{11} 109–11° of 3-methyl-2,4-heptadiene dihydrobromide. (*5*) The 1st stage of the reaction consists in splitting 2 H off the BuOH to give PrCHO; the latter undergoes condensation to give PrCH:CEtCHO: PrCHO + $CH_2(CHO)Et$ → PrCH(OH)CH(CHO)Et → H_2O + PrCH:C(CHO)Et; this reaction was found to take place readily over the Lebedev catalyst at 250–400°. Reduction by the H supplied in the primary dehydrogenation of BuOH leads to an unsatd. alc., PrCH:C(CHO)Et + 2H → $PrCH:C(CH_2OH)Et$, which, under the influence of the dehydrating component of the catalyst, loses H_2O and isomerizes into either $Pr:CHCEt:CH_2$ or Pr:CHCMe:CHMe or MeCH:CHCH:CMeEt, the latter two being more stable. **VI. Catalytic formation of C_6H_{10} hydrocarbons from isopropyl alcohol.** Yu. A. Gorin, A. A. Vasil'ev, and A. K. Panteleeva. *Ibid.* 917–22 (in Russian).—Under optimum conditions, 360–70°, rate of feeding of Me_2CHOH 30 ml./min., over a mixed Lebedev catalyst (vol. 5 l.), a typical balance was: from 9182 g. Me_2CHOH, gas 2285 l. (CO_2 1.5, C_nH_{2n} 42.1, H_2 56.0 vol. %), condensate 6085 g. sepg. into an upper (hydrocarbon) layer, 1474 g., and a lower (aq.) layer of the compn. Me_2CO 27.7, alc. 17.4, and H_2O 51.0 wt. %; hydrocarbon yield 16.0% of Me_2CHOH supplied, 17.8% of Me_2CHOH reacted. Of the hydrocarbon layer, the fraction b. <130° was further fractionated into b. <70°, 70–80°, 80–100°, 100–30°, residue and losses, with the amts. 19.8, 55.3, 5.6, 13.5, 3.6, and 2.2 wt.-%, resp. The main 70–80° fraction was narrowed down to 75–7° and identified as 2-methyl-1,3-pentadiene, with a small amt. of 2-methyl-2,4-pentadiene, detected by the ligroin-insol. residue of the condensation product with maleic anhydride (B. and F., *loc. cit.*). The 75–7° fraction contains 94.5% C_6H_{10}; the yield is approx. 5% of the theory. The mechanism of the conversion is represented as follows: MeCH(OH)Me → H_2 + MeCOMe; 2MeCOMe → $MeCOCH_2CMe_2OH$ → H_2O + $MeCOCH:CMe_2$; $MeCOCH:CMe_2$ + H_2 → $MeCH(OH)CH:CMe_2$ → H_2O + $CH_2:CHCH:CMe_2$ or $MeCH:CHCMe:CH_2$. **VII. Catalytic formation of hydrocarbons C_8H_{14} from secondary butyl alcohol.** Yu. A. Gorin and Yu. A. Borgman. *Ibid.* 1286–94 (in Russian).—With the Lebedev (*ibid.* 3, 608 (1933)) catalyst, modified in the sense of increased amt. of the dehydrogenating component at the expense of the dehydrating part, activated at 500°, 2 hrs., EtCH(OH)Me gave the highest yield of liquid products at 300°. At that temp., rate of feeding 1 ml./min., total single run 100 ml., after repeated recycling of the unreacted alc., 3747 g. 2-butanol gave: unreacted 1302 g., gas 400 l., hydrocarbons from condensate 357.5 g. The gas was, in vol. %, H_2 88, C_4H_8 11, the latter identified as 2-butene (by bromination).



V results only in a slight shift of all 3 bands to shorter λ and a very slight increase in intensity. The spectrum of VIII can also be viewed as a combination of III and IV, with ω_1 twice as intense as that of III and shifted to shorter λ by 35 A., ω 2.7 times higher and shifted to shorter λ by 200 A., ε 1.5 times lower than that of IV and shifted to shorter λ by 75 A.; as in III, ω_1 of VIII actually consists of 2 bands, the lower of which, ω_1', is indicated by 2 bends. (6) Only the ω_1 band of VI in EtOH (10^{-4}–10^{-5} M) + alkali (1 mole per mole VI) is shifted to longer λ by approx. 400–450 A.; absorption beginning at λ 4300; alcoholysis occurs only at 100-fold diln.; with 10 moles alkali, the salt withstands alcoholysis up to 1000-fold diln.; increasing amts. of alkali (100–1000 moles) cause no further shifts but somewhat enhance ω_1, lower ε about one-half, deepen and sharpen the min. between ω_1 and ε, and merge the 2 narrow ω_1 bands into one. As compared with the Na salt of I, that of VI is more resistant to alcoholysis. (7) In VII, addn. of alkali (1 mole) shifts the beginning of absorption to longer λ by 100–130 A.; ω_1 is shifted to longer λ by 50 A.; ε is lowered from 20,000 to 12,000. The salt withstands 10-fold diln. (in contrast to II). Increase of the amt. of alkali to 10 moles (per mole VII) causes a further shift of the absorption limit to longer λ by 220–270 A. but even a single 10-fold diln. is enough to push the limit back to shorter λ by 220 A.; the restoration, however, is not complete, as the portion between ε 100 and 1000 does not completely revert to the position of the neutral VII; nor does a 2nd 10-fold diln. bring about complete alcoholysis. The soln. VII (10^{-4}–10^{-5} M) + 10 moles alkali per mole VII shows a shift of ε to longer λ by 425 A. (relative to the neutral VII) and fusion of ω_1 with ε, resulting in a single broad band, max. λ 3275, ε 16,000; ω_1 is shifted to longer λ by 210 A. and is lowered one-half. On further increase of the amt. of alkali (100 and 1000 moles), ε rises to 40,000, without further shift; the increase of height of this band is evidently also the result of an increase of ω_1, which is merged with ε; with 20,000 moles alkali, ε is lowered one-half, ω_1 is strongly increased, resulting in 1 broad band with a rounded max., λ 3210, ε 19,500. (8) Absorption of V (10^{-4}–10^{-5} M) + 1 mole alkali per mole V is not substantially different from neutral V except for an av. shift to longer λ by 70–75 A. and a slight rise of ω_1 and ε. However, addn. of 10 moles alkali does cause marked changes: ω_1 is raised from ε 7000 to 20,000, owing to a shift of ε to longer λ by 445 A. and a merger with ω_1 to (ω_1 + ε), λ max. 3240, ε 20,000; the intensity of ω_1 falls to one-half and its position is shifted to longer λ by 205 A., coinciding exactly with its position in neutral I; an addnl. narrow band appears at λ 2135, ε 35,000. One 10-fold diln. causes some alcoholysis, shifting the absorption limit back to shorter λ by 195 A.; further diln. has no further effect. With 100 moles alkali, the limit (at ε 100) is shifted by 400 A. relative to the neutral soln.; a 1st 10-fold diln. causes partial alcoholysis (back shift by 70 A.), a 2nd diln. has no effect. ε (at λ 3300, ε 50,000) coincides with that of II (+1 mole alkali) and to ω_1 of neutral I; the intensity (ε 50,000) is the highest observed for ε; further increase of alkali (1000 and 20,000 moles) weakens ε somewhat but raises ω_1. (9) V (4 × 10^{-4}–10^{-5} M) in 63.8% H_2SO_4 in EtOH begins to absorb at λ 4200, forms a broad band (ω_1 + ε), λ max. 3160, ε 25,000, a deep min. λ 2600, ε 100, followed by a rise to a bend corresponding to ω_1 (ε 2000–6000). Similarly, VIII in the same soln. forms a single very broad ω_1 + ε band, λ max. 3270, ε 22,000, a deep min. (λ 3000, ε 360), and a 2nd max. (ω_1) λ 2300, ε 4000. (10) The spectra are interpreted in the light of the presence of 2 structure types, one involving conjugations between Ac and the ortho OH and between the para OH and the ring (predominant ω state), the other conjugations between Ac and the para OH and between the ortho OH and the ring (predominant ε state); the effects of methylation and of alkali salt formation fit the proposed pattern. The enhancement of both ω and ε in the presence of strong H_2SO_4 is explained by resonance effects between oxonium and carbonium structures.

N. Thon